

## Abstract

An arc tube body 20 and a foil such as molybdenum foil 30 are joined with each other such that a compressive stress of  $10^5$  N/m<sup>2</sup> or more remains at an ordinary temperature in the arc tube body 20 along a junction surface. The compressive stress is always generated on the arc tube body 20 even if a fluctuation in the stress is caused on the junction surface by the repetition of the ON/OFF of the arc tube (or a tensile stress is caused to have a very small value even if the compressive stress and the tensile stress are alternately generated). Thus, the junction strength of both members may be increased. In one embodiment, a plurality of cracks (intercrystalline cracks) may be generated on the molybdenum foil 30 by a high pressure acting during pinch seal, and quartz glass is caused to enter the cracks so that the junction strength of both members can be increased.